

REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, the applicants respectfully submit that the pending claims are not anticipated under 35 U.S.C. § 102 and are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicant respectfully requests that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.

The applicant will now address each of the issues raised in the outstanding Office Action.

Rejections under 35 U.S.C. § 102

Claims 1, 3-10 and 29 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,049,524 ("the Fukushima patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Since claim 9 has been canceled, this ground of rejection is rendered moot with respect to claim 9.

Before discussing patentable features of the claimed invention, the Fukushima patent is introduced. Referring to Figure 2, the Fukushima patent concerns a so-called multiplex router having two routing calculation units (RCUs) 11a and 11b, and one or more forwarding process

units 13. The Fukushima patent aims to both (1) prevent interruption of packet forwarding and (2) reduce the amount of information transmitted from an active RCU to one or more standby RCUs. (See, e.g., column 3, lines 49-55.) The Fukushima patent purports to achieve this goal by having the active RCU send only network link-state information (not neighboring router states and interface states) to the standby RCU. (See, e.g., column 4, lines 9-44.) As can be seen from Figure 2, an active RCU 11a stores various routing protocol information 21 including link state database information (LSDB) 22, interface state information 23, and neighboring router state information 24. On the other hand, a standby RCU 11b stores only LSDB 22.

As is clear from Figures 9-11 and the associated portions of the specification from column 10, line 30 through column 11, line 15, the active RCU **only passes changes in its LSDB 22** to the standby RCU. More specifically, Figure 9 shows the procedure of the process steps of the protocol information manager module 15 in the active RCU. The protocol information manager module 15 receives information from the RP packet transmission-reception module 14, and checks if information received is network link-state information (step 131). If the information is network link-state information, the module 15 checks if the information received agrees with the contents of the link-state data base 22 (step 133). **If agreement is confirmed, it is not necessary to update the link-state data base 22. If they disagree,** in other words, if it is necessary to update or delete existing information or add new information, **the module 14 updates the link-state data base 22** (step 134).

Then, the module 14 **sends notification that the network link-state data base 22 has been updated and the contents of update to the data base integration module 17** and the routing table calculation module 16 (step 135).

Figure 10 shows the procedure of the process steps by data base integration module 17 on receiving notification of update of the link-state data base 22. When the data base integration module 17 receives update information (step 141), if its RCU is active (step 142), the data base integration module 17 **sends notification that the link-state data base 22 has been updated and the contents of update to the standby RCU 11.**

Figure 11 shows the procedure of the process steps by the data base integration module 17 in the standby mode RCU when the module 17 receives notification of update of network link-state information from the active RCU. In this process, the data base integration module 17 receives notification of update and obtains update information (step 151). The module 17 checks if update information agrees with the contents of the link-state data base 22 retained (step 152). If agreement is confirmed, it is not necessary to update the link-state data base 22, and therefore the process is terminated. If they disagree, in other words, if existing information is updated or deleted or new information is added, the module 17 updates the link-state data base 22 (step 153). The module 17 then sends update notification that the link-state data base 22 has been updated and the contents of update to the routing table calculation module 16 (step 154), and closes the process.

As can be appreciated from the foregoing, in the Fukushima patent, the active RCU does not provide a copy

of network state information **received by** the active RCU to the standby RCU. Rather, **it only sends changes to its link state database 22.** Moreover, the active RCU does not providing a copy of such information (or even link state information) to the standby RCU by flooding such information onto a local area network within the router.

Independent claims 1 and 8, as amended, are not anticipated by the Fukushima patent because the Fukushima patent does not teach providing a copy of network state information **received by** a designated routing facility to a standby routing facility. Assuming, arguendo, that the active RCU teaches the claimed designated routing facility and that the standby RCU teaches the claimed standby routing facility, the active RCU does not providing a copy of network state information, received by it, the standby RCU. Thus, independent claims 1 and 8 are not anticipated by the Fukushima patent for at least this reason. Since claims 4, 5, 6 and 10 depend, either directly or indirectly, from claim 1, and since claim 29 depends from claim 8, these claims are similarly not anticipated by the Fukushima patent.

Claim 4 has been rewritten in independent form to include the recitations of original base claim 1. Independent claim 4 is not anticipated by the Fukushima patent because the Fukushima patent does not teach providing a copy of such information (or even link state information) to the standby RCU by flooding such information onto a local area network within the router. As discussed, above, in the Fukushima patent, the active RCU only sends changes to its LSDB to the standby RCU. Thus, claim 4, as amended, is not anticipated by the Fukushima patent for at least this reason.

Rejections under 35 U.S.C. § 103

Claim 2 stands rejected under 35 U.S.C. § 103 as being unpatentable over the Fukushima patent in view of U.S. Published Patent Application No. 2002/0021675 ("the Feldmann publication"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

The Examiner relies on the Feldmann publication as teaching the intradomain protocol IS-IS. (See Paper No. 10042005, page 5.) Even assuming, arguendo, that this is true, and further assuming, arguendo, that one skilled in the art would have been motivated to combine these references as proposed, the combination still does not compensate for the deficiencies of the Fukushima patent with respect to claim 1, discussed above. Accordingly, claim 2 is not rendered obvious by the Fukushima patent and the Feldmann publication for at least this reason.

Claims 11-13, 15-19, 20-28 and 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Fukushima patent in view of U.S. Patent No. 6,347,085 ("the Kelly patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Before addressing this rejection, further aspects of the Fukushima patent are introduced. The Kelly patent is also introduced.

In the Fukushima patent, the multiplex router has a single IP address shared by the multiple RCUs. (See, e.g., Figure 3.) **Only the routing protocol (RP)**

transmission-reception module 14 of a currently active RCU provides network information to external nodes. (See, e.g., steps 105 and 107 of Figure 6 and steps 114 and 115 of Figure 7. A standby RCU only transmits network information to external nodes (e.g., by starting its RP transmission-reception module 14) when it enters the active mode. Thus, an RCU currently in the standby mode does not transmit such information.

Further, since the multiplex router has a single IP address shared by the multiple RCUs, since the multiple RCUs have synchronized link state information, and since the multiple RCUs independently run their routing algorithms on the synchronized link state information, the external routers 30 need not know the fact that the multiplex router has more than one RCUs, nor do the external routers 30 need to know which of the RCUs is active and which is standby. This can be inferred from the operations described by the Fukushima patent, and is suggested by column 8, lines 14-20 which state:

Because the other routers 30 that received Hello packets from the route calculation unit 11b are periodically receiving Hello packets from the multiplex router 10, the other routers 30 do not regard the multiplex router 10 as having run into a failure nor do they rewrite the routing tables they hold, even if the ID list of other routers included in received packets is incomplete. [Emphasis added.]

The Kelly patent concerns gateways between telephone (PSTN) networks and Internet protocol (IP) networks, as well as address (e.g., telephone number, IP domain)

resolution. Although it mentions the possibility of providing redundant alternative equipment, as well as listing such redundant equipment and instructing when to use such redundant alternative equipment, it has nothing to do with redundant route calculating units in a given router. Thus, as discussed below, one skilled in the art would not have been motivated to combine the Fukushima and Kelly patents as proposed by the Examiner.

First, independent claims 11, 16, 18, 19 and 28 are not rendered obvious by the Fukushima and Kelly patents because the proposed combination of these patents neither teaches, nor suggests, an act of (or means for) informing an external node 30 that a router has redundant routing facilities. The Examiner cites column 5, lines 40-49 as teaching this feature since it says that the router 10 with the two RCUs 11a and 11b is referred to as a "multiplex router device" to distinguish it from other routers. The applicants respectfully submit that the cited section is merely an introductory portion intending to help a reader of the patent specification to understand the invention in the Fukushima patent, and was not discussed in the context of information communicated from the multiplex router device to other nodes 30. Thus, independent claims 11, 16, 18, 19 and 28 are not rendered obvious by the Fukushima and Kelly patents for at least this reason. Since claims 12, 13 and 15 depend from claim 11, and since claims 17 and 30 depend from claim 16, these claims are similarly not rendered obvious.

Second, independent claims 11, 16, 18, 19, 20, 24 and 28 are not rendered obvious by the Fukushima and Kelly patents because the proposed combination of these

patents neither teaches, nor suggests, an act of (or means for) providing, with a current standby routing facility, network information to the external node, or receiving such information by the external node. The Examiner contends that column 7, lines 39-52 of the Fukushima patent teach this feature. Specifically, the Examiner asserts:

After switchover, route calculation unit 11b exchanges routing protocol packets with routers 30 and sends a routing table to routers 30 through forwarding process units 13.
[Emphasis added.]

Paper No. 10042005, page 6. However, after switchover, the former standby RCU is now the active RCU. (See, e.g., column 7, lines 46-49, as well as Figure 7, where 115 follows 114.) Independent claims 11, 16, 18, 20 and 24 have been amended to more clearly and expressly distinguish these claims over the cited aspect of the Fukushima patent. Accordingly, independent claims 11, 16, 18, 20 and 24 are not rendered obvious by the Fukushima and Kelly patents for at least this reason. Since claims 12, 13 and 15 depend from claim 11, since claims 17 and 30 depend from claim 16, since claims 21-23 depend, either directly or indirectly, from claim 20 and since claims 25-27 depend, either directly or indirectly, from claim 24, these claims are similarly not rendered obvious.

Finally, one skilled in the art would not have modified the Fukushima patent in view of the Kelly patent as proposed by the Examiner. First, the applicants respectfully note that the Fukushima patent concerns a

router with redundant RCUs, and routing protocol operations performed (or not performed) by the RCUs, largely depending on whether they are in an active mode or a standby mode. On the other hand, the Kelly patent concerns gateways between telephone (PSTN) networks and Internet protocol (IP) networks, as well as address resolution. Although the Kelly patent mentions the possibility of providing redundant alternative equipment, as well as listing such redundant equipment and instructing when to use such redundant alternative equipment, it has nothing to do with redundant route calculating units in a given router. Thus, there is no suggestion to modify the Fukushima patent in view of the Kelly patent.

Second, and more importantly, the Examiner's rationale for combining the purported teachings of the Kelly patent into the Fukushima patent is that one skilled in the art would have modified the Fukushima patent so that it informed an external node of the identity of the designated routing facility "so that the external router knows which routing facility to use to route packets." Paper No. 10042005, page 6. However, the internal operation of the multiplex router in the Fukushima patent need not be transparent because the external nodes 30 do not need to know which of the RCUs is active and which is standby. Indeed, the active and standby RCUs apparently share the same IP address, as shown in Figure 3. To reiterate, column 8, lines 14-20 of the Fukushima patent state:

Because the other routers 30 that received Hello packets from the route

calculation unit 11b are periodically receiving Hello packets from the multiplex router 10, the other routers 30 do not regard the multiplex router 10 as having run into a failure nor do they rewrite the routing tables they hold, even if the ID list of other routers included in received packets is incomplete. [Emphasis added]

This passage clearly suggests that the external nodes 30 needn't be concerned with the internal workings (at least as far as which RCU is in the active mode and which is in the standby mode) of the multiplex router 10.

Accordingly, the Examiner's rationale for combining the Kelly and Fukushima patents is unsupported and contrary to the teachings of the Fukushima patent.

Accordingly, independent claims 11, 16, 18, 20 and 24 are not rendered obvious by the Fukushima and Kelly patents for at least this additional reason. Since claims 12, 13 and 15 depend from claim 11, since claims 17 and 30 depend from claim 16, since claims 21-23 depend, either directly or indirectly, from claim 20 and since claims 25-27 depend, either directly or indirectly, from claim 24, these claims are similarly not rendered obvious.

Claim 14 stands rejected under 35 U.S.C. § 103 as being unpatentable over the Fukushima and Kelly patents in view of the Feldmann publication. The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Since the purported teaching of the Feldmann publication fails to compensate for the deficiencies of

the Fukushima and Kelly patents with respect to claim 11 (discussed above), claim 14 is not rendered obvious by the Fukushima and Kelly patents in view of the Feldmann publication.

Conclusion

In view of the foregoing amendments and remarks, the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicants request that the Examiner pass this application to issue.

Respectfully submitted,

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